

LASER PROCESSING

Abstract of the Disclosure

A controlled, switched laser system for vaporizing a target structure on a substrate includes a diode-pumped, solid-state laser for producing a laser output, a controllable switch for controlling the on/off state and power level of the laser, and a wavelength shifter. The wavelength shifter shifts the wavelength of the laser output from a conventional wavelength to a wavelength beyond the absorption edge of the substrate but shorter than $1.2 \mu\text{m}$ in order to obtain a decrease in absorption of the laser output by the substrate due to the shift in the wavelength of the laser output. The wavelength shifter is removably insertable into the switched laser system so as to enable the switched laser system to operate at the conventional wavelength and at the wavelength beyond the absorption edge of the substrate. Heating of the substrate and hence damage to the substrate is limited due to the wavelength being beyond the absorption edge of the substrate. Good depth of focus of the laser beam output is maintained relative to spot size of the laser beam output due to the wavelength being less than about $1.2 \mu\text{m}$.

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